Name: Date:

Exam: Function Reflections (Practice version 41)

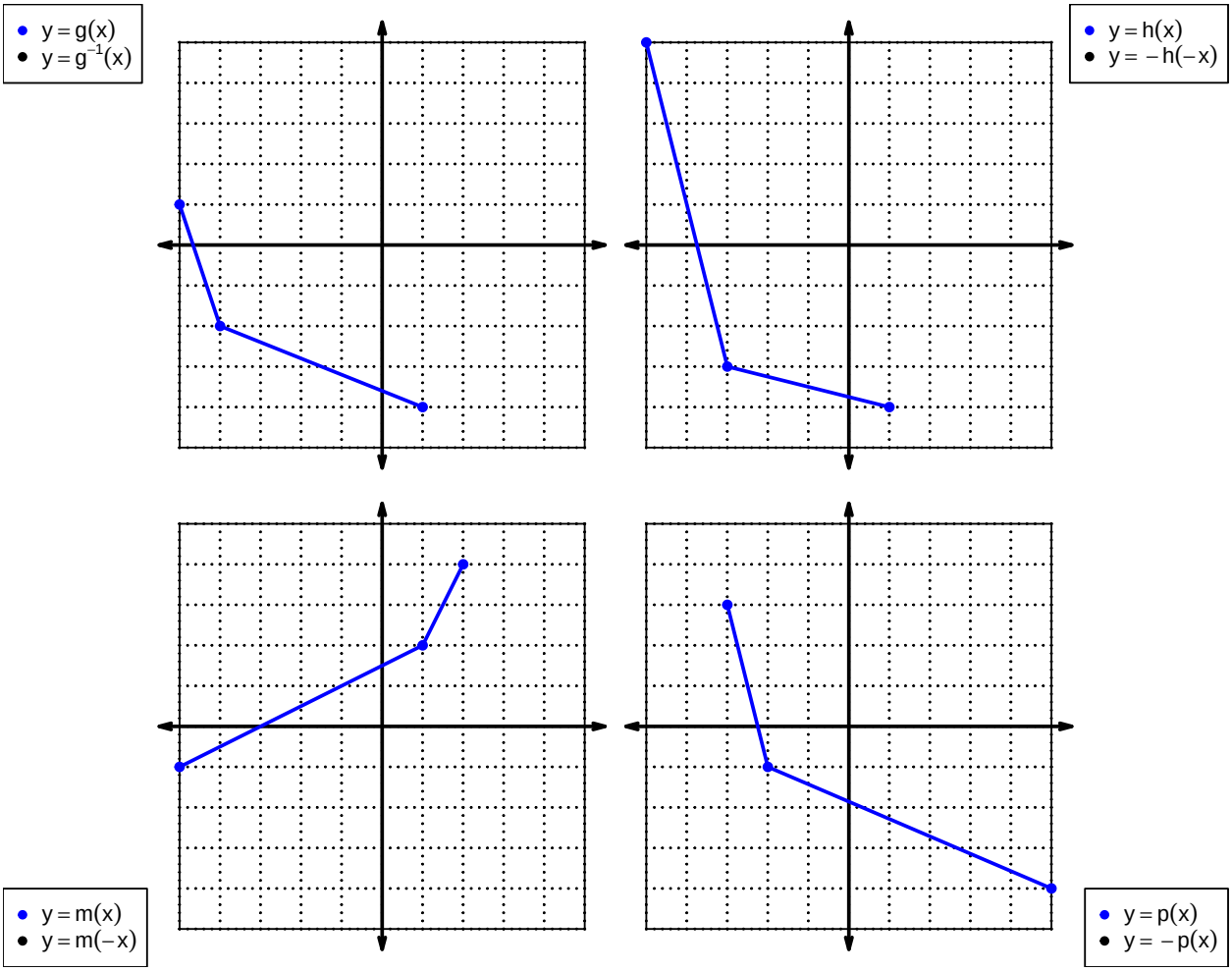
1. Let function f be defined by the polynomial below:

$$f(x) = 4x^5 + 6x^4 + 7x^3 - 3x^2 + 2x - 8$$

Draw lines that match each function reflection with its polynomial:

Reflections	Polynomials
$f(-x)$	$-4x^5 + 6x^4 - 7x^3 - 3x^2 - 2x - 8$
$-f(-x)$	$-4x^5 - 6x^4 - 7x^3 + 3x^2 - 2x + 8$
$-f(x)$	$4x^5 - 6x^4 + 7x^3 + 3x^2 + 2x + 8$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



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For all questions on this page, the functions f, g, and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	3	9	4
2	4	5	7
3	7	3	8
4	6	7	3
5	8	1	5
6	9	2	1
7	1	8	6
8	2	6	9
9	5	4	2

3. Evaluate $g(1)$.

4. Evaluate $f^{-1}(4)$.

5. By filling more rows of the table, it is possible to make function h **even**. If that were done, what would be the value of $h(-7)$?

6. By filling more rows of the table, it is possible to make function f **odd**. If that were done, what would be the value of $f(-3)$?

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7. A function, f, is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g, is **odd** if $g(x) = -g(-x)$ for all x in the domain.
   Let polynomial p be defined with the following equation:

$$p(x) \;=\; x^3 + x$$

   a. Express $p(-x)$ as a polynomial in standard form.

   b. Express $-p(-x)$ as a polynomial in standard form.

   c. Is polynomial p even, odd, or neither?

   d. Explain how you know the answer to part c.

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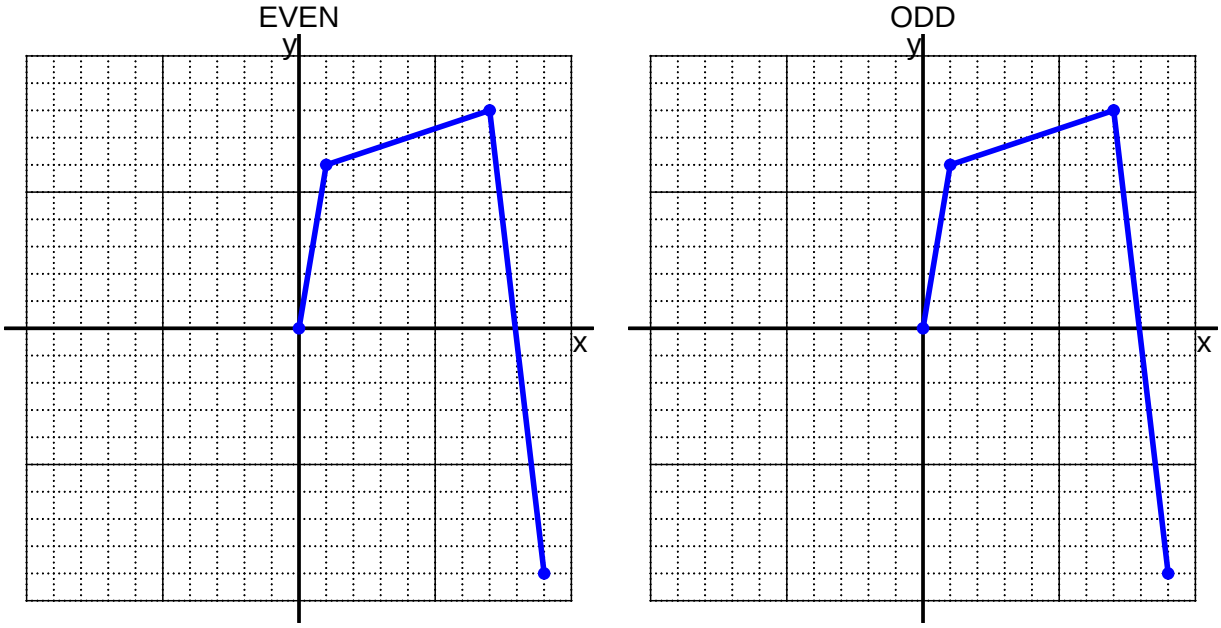
8. I have drawn half of a function. Draw the other half to make it even or odd.



9. Let function f be defined with the equation below.

$$f(x) \;=\; 5(x-3)$$

a. Evaluate $f(19)$.

b. Evaluate $f^{-1}(45)$.

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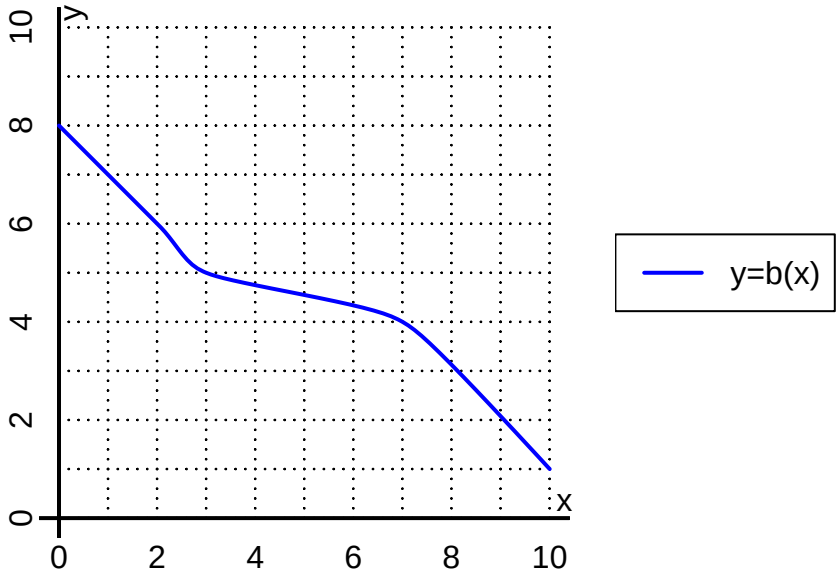
10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(2)$.

b. Evaluate $b^{-1}(5)$.

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11. Function f is defined by the table below.

    a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-9			
-1	-6			
0	0			
1	6			
2	-9			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?